

CLAIMS

1. Method for inspecting channel pipes, in which hemispherical or fully spherical digital images recorded at specific locations (18) in the pipe are calculated and perspective images enabling virtual swivelling are produced, characterized in that with a known geometry of the imaged pipe, from the image data taken at one location (18), the intermediate images for a random, neighbouring location (16) (of the desired, fictive camera position) are calculated and represented, in that the recorded images are projected computationally onto the known pipe geometry and the perspective image data resulting therefrom for the neighbouring location are calculated.
2. Method according to claim 1, characterized in that at each image point of the 2D-fisheye image  $P'$  ( $X_f, Y_f$ ) with known imaging function is calculated the angle of incidence ( $\alpha, \theta$ ) of the spherical coordinates and from this a corresponding image point in 3D space  $P$  ( $X_r, Y_r, Z_r$ ) on the pipe surface.
3. Method according to claim 1, characterized in that from the desired, fictive camera position (16) and its viewing angle in space are calculated the image points located in the desired section of the image plane, in that from the image point coordinates ( $X_b, Y_b$ ) of the image plane and assuming a projection centre at a distance  $F$  from the image plane B, the corresponding image point coordinates ( $X_r, Y_r, Z_r$ ) on the inner surface of the known pipe geometry and the corresponding image point coordinates ( $X_f, Y_f$ ) of the fisheye image are calculated and in this way the colour and brightness value of the image point on image plane B with  $P''$  ( $X_b, Y_b$ ) =  $P$  ( $X_f, Y_f$ ) is obtained.

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